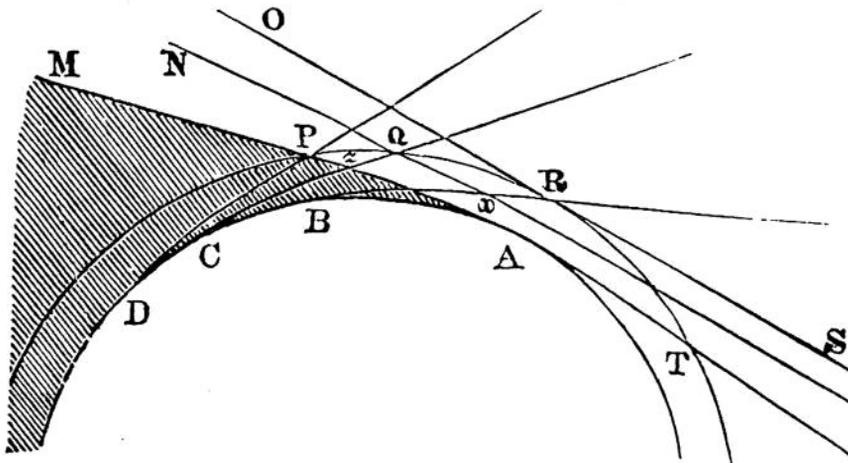


TWILIGHT.

Twilight is a phenomenon produced by reflection. When the sun has descended so low beneath the horizon as to give no opportunity for the influence of direct rays by refraction, the solar beams, passing over the earth's surface, strike upon the atmosphere, or the clouds which float in it, and are reflected downward, producing that secondary illumination called twilight; the effect of which is to shorten the duration of darkness, by prolonging the apparent continuance of the sun above the horizon. Such, at least, is the explanation which may be given upon the admission of the materiality of the agent. Upon this subject we must be silent, for it is useless to contradict that which cannot be disproved; but it may be remarked, that if light be an inconceivably minute ethereal fluid, such as the advocates of the theory maintain, there is nothing remarkable in the circumstance that the air itself should be able to oppose its progress, reflect it, and illuminate the earth's surface with its indirect rays.

Sir John Herschell's demonstration of this phenomenon is so beautiful and explicit, that we may be permitted to quote it:—"Let A B C D be the earth: A is a point on its surface where the sun S is in the act of setting; its last lower ray, S A M, just grazing the surface at A, while its superior



rays, S N, S O, traverse the atmosphere above A without striking the earth, leaving it finally at the points P Q R, after being more or less bent in passing through it, the lower most, the higher less, and that which, like S R O, merely grazes the exterior limit of the atmosphere, not at all. Let us consider A B C D, each more remote than the last from